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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab Field Office
82 East Dogwood
Moab, Utah 84532

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
3809
(UTY02)
UTU-72499

JUN 18 2009

CERTIFIED MAIL # 7006 0100 0001 5607 5701
RETURN RECEIPT REQUESTED

Lantz Indergard
PO Box 248
La Sal, Utah 87530

RE: Mine Plan Modification-Backfill the Sentinel East Pit-More Information Requested

Dear Mr. Indergard:

On April 28, 2009 the BLM received Lisbon Valley Mining's Mine Plan Modification to backfill the Sentinel East Pit. The BLM needs additional information from Lisbon Valley Copper Mine before analysis of the mine plan modification can move forward.

The BLM has reviewed the groundwater analytical data and annual report for 2007 titled "2007 Annual Update of the Lisbon Valley Hydrologic System Evaluation" by Whetstone and Associates, the 1998 report from Adrian Brown titled, " Annual Update of the Lisbon Valley Hydrogeologic System Evaluation", the Record of Decision (ROD) for the Lisbon Valley Copper Mine EIS, and BLM's report to the IBLA in response to the remand, and various specialist reports that supported the final analysis regarding pit backfill.

Based on the data and information we have in our files, we are unable to identify what has changed in the hydrologic model and waste rock characterization tests that would support the BLM in making changes to the decisions made in the ROD and the IBLA Remand. In particular, the BLM must respond to the five reasons listed on page 10 of the ROD that stated why the Open Pit Backfill Alternative was not selected. The BLM also must respond to the outcome described in the Remand that was based on a more detailed analysis of the potential for alkaline mobilization of oxyanions (specifically, selenium, molybdenum and arsenic) within the waste rock backfill.

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Record of Decision (page 10)

Reason 1: *"The analysis indicates under both backfill scenarios, that there would be water quality impacts from backfilling the pits with material from the waste dumps, due to the chemical makeup of the waste rock backfill material, particularly the acid generating material. With the tremendous increase in surface area exposed in the rubblized backfill material, chemical reactions between this material and the groundwater could present a host of unquantifiable adverse impacts to the down gradient aquifers, resulting from chemical interactions of groundwater and the waste rock."*

- Available data seems to support the fact that there is more acid neutralizing waste rock then there is acid generation waste rock present at the Lisbon Valley Copper Mine. The same appears to be true in the pit walls for the Sentinel East Pit. However, due to the close proximity of the Burro Canyon aquifer from the bottom of the Sentinel East Pit and the vertical movement component of groundwater flow from the surface to the N-aquifer, there is a potential that under the alkaline conditions within the waste rock pile and the presence of selenium, molybdenum and arsenic, these metal concentrations would increase in these aquifers through time. It appears that recharge to the Burro Canyon aquifer, if any is slow and the aquifer has low conductivity. However, because the bottom of the pit is 70 feet above the aquifer, is there a potential for the potentiometric surface of the aquifer to rise when mining ends and would it ever drain into the bottom of the pit and saturate the waste rock fill? Would Lisbon Valley please provide a more detailed cross-section including labeling the formations exposed in the pit with the potentiometric surface of the aquifer and any potential perched zones in the fault blocks under the pit?

- Though the information was not provided in the Plan Modification, Lisbon Valley Mining has told the BLM that the Sentinel East Pit does not collect water either meteoric or as inflow from the Burro Canyon aquifer. Because the pit does not hold meteoric water, that water is migrating somewhere. The hydrologic model that we have on file indicates that the Sentinel Pit (the Sentinel West and East pits were combined in the model) remained open, that the water quality in the N-aquifer below the pit would improve for the first 71 years after mining, with an expected nominal decrease to an increase steady-state TDS of 6% (2007 Whetstone Report, Executive summary). By backfilling the pit there would be no direct runoff of meteoric water into the pit and therefore no short-term improvement of water quality in the N-aquifer and a long term 6% increase in TDS. Lisbon Valley has indicated that there is a change in the hydrologic model. Does Lisbon Valley Mining have data to show how the model has changed and what the effects are? Also, does Lisbon Valley Mine have any information on the percolation rates or residence time of meteoric water within the proposed backfill for the Sentinel East pit?

Reason 2: *"A secondary problem associated with backfilling is the decision to select the Waste Rock Selective Handling Alternative to mitigate potential for post-mining acid*

rock drainage. Under this alternative, the acid generating waste rock mined from the pits will be selectively place in the waste dumps to encapsulate the acid generating material within acid neutralizing material. The intent is to encapsulate this material such that there will be no long-term acid leachates emanating from the waste dumps. By requiring a backfill of material from the waste dumps into the pits, the engineered placement and isolation of acid generating material in the dumps would be jeopardized and foregone."

- The proposal describes the source of the waste rock as the Centennial Pit. Based on the information in the Rock Type Designation table provided in Attachment 1 of the Mine Plan Modification, the BLM assumes that there would be more waste rock with an acid neutralizing potential (ANP) than waste rock with an acid generating potential (AGP). The total tonnage of waste rock that would be used in the backfill is provided (~9,000 Ktons) but the proposal does not provide a break down as to how much of that tonnage is estimated to be ANP waste rock, and how much of that tonnage is expected to be AGP waste rock? Is there enough ANP material to adequately encapsulate the AGP waste rock?

- Does Lisbon Valley Mining have to include AGP waste rock as backfill in this pit? What other AGP handling options would Lisbon Valley Mining propose or consider? Provide more detailed information regarding the handling of AGP waste rock, and how it would be kept out of the proposed pond level in the pit, if ever there were ever a rise in the Burro Canyon aquifer.

Reason 3 : *"From the stand point of visual impact reduction, the analysis indicates that even with backfilling, there will still be surface dumps present because of the swell factor of rock once it is taken from the ground and rubblized."* In Lisbon Valley Mining's Mine Plan Amendment backfilling the Sentinel East Pit would expand Waste Dump C by 100,00 square yards for the top of the dump and 117,000 square yards for the dump slope. Waste Dump A, which has not been constructed yet, would be reduced in size by 230,000 square yards. The difference is only 13,000 square yards or about 0.3 acres, which is not a substantial reduction in disturbed surface area. The waste dumps were approved in the ROD for the EIS and all the Mine Plan Amendment does is remove an open pit without substantially minimizing waste dumps. This is a trade off that would have to be analyzed. At this time, we do not need more information from Lisbon Valley Mining, but may in the near future.

Reason 4: *"With post-mining pit berming, fencing and signing, public safety issues will be minimized. The analysis indicated no know instances of public safety problems associated with the unbermed, unfenced and unsigned pits that have existed on the site for the past 20 years."* The BLM does not require more information from Lisbon Valley Mining on this issue. The benefit to public safety from pits and highwalls is self explanatory and does not require further clarification from Lisbon Valley Mining at this time.

Reason 5: *"Not requiring backfilling of the pits also involves a conservation of resources issue. Requiring the pits to be backfilled will render future recovery of lower grade copper ore remaining in the pits at the end of mining infeasible from an economic standpoint. Summo will mine copper reserves to an "economic limit", determined by mining costs, grade of copper and the price of copper. However, when they have reached this limit, there will still likely be lower grade copper ore remaining in the pits. Its' grade would be uneconomical for recovery by Summo at prices and Technology projected at that time."* The BLM assumes that because Lisbon Valley Mining is proposing to backfill the Sentinel East pit that any copper remaining in the pit is not of a grade that would make mining and recovery feasible. Is this true?

Response to the Remand

In a January 29, 1999 Memorandum from the Moab Field Office to the State Director, it states that in IBLA's ruling (National Wildlife Federation, et al., 145 IBLA 348 (1998)) indicated that the FEIS and accompanying ROD did not support the rejection of the Open Pit Backfilling Alternative in light of inconsistent information in the record. This memorandum was intended to provide BLM's reconsideration of the backfill issue as directed, and to provide the BLM State Office with the necessary information to respond to the IBLA's remand regarding the Open Pit Backfilling issue. The last paragraph of the memorandum states: *" The analysis of the technical issues, and our process and actions in identifying and clarifying these issues, is provided in the attached report. We believe the information provided in the attachment adequately addresses the IBLA's concerns identified in its remand direction to further consider backfilling. Based on the review of the technical information in the case file, the FEIS and ROD, we believe our analysis of the data led us to a reasoned prediction of potential impacts and the most appropriate course of action. All of the data and analyses, conducted before and after the FEIS and ROD were released, supports the assessment made in the FEIS and ROD that utilizing waste rock from the mining operation to backfill the pits at the cessation of mining poses a significant risk of adverse impact on groundwater in the area."*

- The existing waste rock data shows selenium, arsenic and molybdenum are at detectable levels and the existing groundwater data shows a presence of mobilized arsenic, molybdenum and selenium. Based on the data it appears that regardless as to whether the acid neutralizing waste rock is saturated in a pit pond or exposed to meteoric water, the alkaline conditions of the waste rock are conducive to support mobilization of selenium, arsenic and molybdenum. The data also shows that the increase in mobilization of these elements is directly proportional to the increase in pH. The hydrologic model indicates downward (vertical) migration of water from the pit to the N-aquifer, therefore there is potential for an increase in elements in this aquifer. Does Lisbon Valley Mining have any data or information that would change the analysis in remand?

Please provide any information available at your earliest convenience. If you have any questions or need more information please contact Rebecca Doolittle at (435) 259-2141.

Sincerely,

A. Lynn Jackson
Acting Field Manager

cc. Tom Munson, UDOGM (M/037/088)

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